

25. An oligonucleotide probe, comprising a sequence of universal and designate nucleotides and/or nucleotide analogs ordered in a pattern, wherein the pattern comprises a root and an iterated unit, and wherein the length of the root is identical to the length of the iterated unit.

26. An oligonucleotide probe of claim 25, wherein each iterated unit comprises a string of universal nucleotides and/or nucleotide analogs followed by one or more designate nucleotide and/or nucleotide analog.

27. The set of oligonucleotide probes of claim 4, wherein the designate nucleotides and/or nucleotide analogs comprise a purine or pyrimidine base, a ribose or deoxyribose sugar, and a phosphate group.

28. The set of oligonucleotide probes of claim 7, wherein the designate nucleotides and/or nucleotide analogs comprise a purine or pyrimidine base, a ribose or deoxyribose sugar, and a phosphate group.

29. The array of claim 8, wherein the designate nucleotides and/or nucleotide analogs comprise a purine or pyrimidine base, a ribose or deoxyribose sugar, and a phosphate group.

REMARKS:

Applicants thank the Examiner for the telephonic interview of March 11, 2003, and for the interview summary of April 15, 2003, indicating that the claims as amended in the supplemental response of Nov. 12, 2002 are supported by the specification and free of the prior art.

Applicants note with appreciation that the Examiner had previously indicated that claims 1-3, 12, and 20-29 were in condition for allowance.

Applicants believe that the application is now in condition for allowance and that no further comment is necessary. Nonetheless, to clarify comments in the record, responses to the outstanding rejections are provided below.

CLAIMS 1-4, 6-8, 10-12 AND 20-29 REJECTED UNDER 35 U.S.C. § 112, FIRST
PARAGRAPH, WRITTEN DESCRIPTION:

The Examiner rejected all pending claims for lack of written description, contending that the agent of record had provided, in the interview of Oct. 29, 2002, an explanation for the term “instance of a pattern of universal and designate nucleotides” that did not match the description in the specification.

Applicants note that this issue was resolved in the interview on April 15, 2003, and that Applicants and Examiner agree that the claims are supported by the specification, and further that the claims are to be interpreted in view of the explanations provided in the specification. An example of such explanation is presented at page 4, line 32:

A set of gapped probes, as the term is used herein, refers to a collection of probes having the same generic probe sequence, e.g., at least ten instances of the generic probe sequence. A generic probe sequence describes a pattern of designate and universal nucleotides, e.g., XXXXUUXUXX. An instance of a generic probe sequence is a sequence of designate and universal nucleotides which conforms to the pattern of the generic probe sequence, e.g., TCTAUUGUCG and GTATUUCUAG are instances of the generic probe sequence XXXXUUXUXX.

Applicants respectfully contend that any explanation provided in the interview of Oct. 29, 2002 was intended to convey the meaning provided in the application. Applicants did not mean to suggest that claims were, as stated by the Examiner, “intended to represent a set of probes that each contained separate instances of universal and designate nucleotides, as in the following pattern:

XXXXXXXXX
UUUUUUUU
UUUUUUUU
UUUUUUUU etc...”

Applicants reject the meaning as set forth by the Examiner, and Applicants respectfully suggest that it was the result of a misunderstanding between the Applicants and the Examiner.

Accordingly, Applicants request withdrawal of all rejections under 35 U.S.C. § 112, first paragraph.

CLAIMS 4 and 6 REJECTED UNDER 35 U.S.C. 103(a):

The Examiner contends that claims 4 and 6 are obvious over Loakes et al. (1995). The Examiner argues that:

These claims remain directed to oligonucleotide sets of probes, wherein the probes a (sic) plurality of instances of universal nucleotides and designate nucleotides in iterative patterns...Loakes et al. disclose the particular embodiments of claims 4 and 6 in that a first string of universal nucleotides is followed by a first segment of designate nucleotides and a second string of universal primers (sic) is followed by a second set of designate nucleotides.

The Examiner also dismisses the relevance of the fact that Loakes is directed to Sanger sequencing.

Applicants thank the Examiner for the agreement during the interview of March 11, 2003, that claims 4 and 6 were amended in the Supplemental Response of Nov. 12, 2002, so as to depend from claim 1, and that features of claims 1, 4 and 6 are not taught or suggested in Loakes et al.

Applicants note that, as described in the Supplemental Response, the amendments were made solely to expedite prosecution.

Although moot for the purposes of the present applications, Applicants contend that claims 4 and 6, prior to the amendments of the Supplemental Response, were allowable. As described in the response of Oct. 29, 2002, the unamended claims 4 and 6 were directed to sets of probes comprising multiple instances of a pattern. Loakes et al. merely describes single instances of certain patterns. Moreover, Loakes et al. only contemplates Sanger type sequencing and PCR, and neither of these technologies would obviously benefit from the use of a set of probes comprising multiple instances of a pattern. Accordingly, Applicants do not agree with Examiner's statements as to the obviousness of the previously pending claims 4 and 6. Nonetheless, as noted above, claims 4 and 6 were amended on Nov. 12, obviating the rejection.


Accordingly, Applicants request withdrawal and reconsideration of the rejections under 35 U.S.C. § 103(a).

Conclusion

For the reasons given above, Applicants respectfully request reconsideration of this application and timely allowance of the pending claims. If there are any fees, such as excess claims fees, due in connection with the filing of this Response, please charge the fees to our Deposit Account No. 18-1945. If a fee is required for an extension of time under 37 C.F.R. §1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

Dated: April 28, 2003

Respectfully submitted,

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